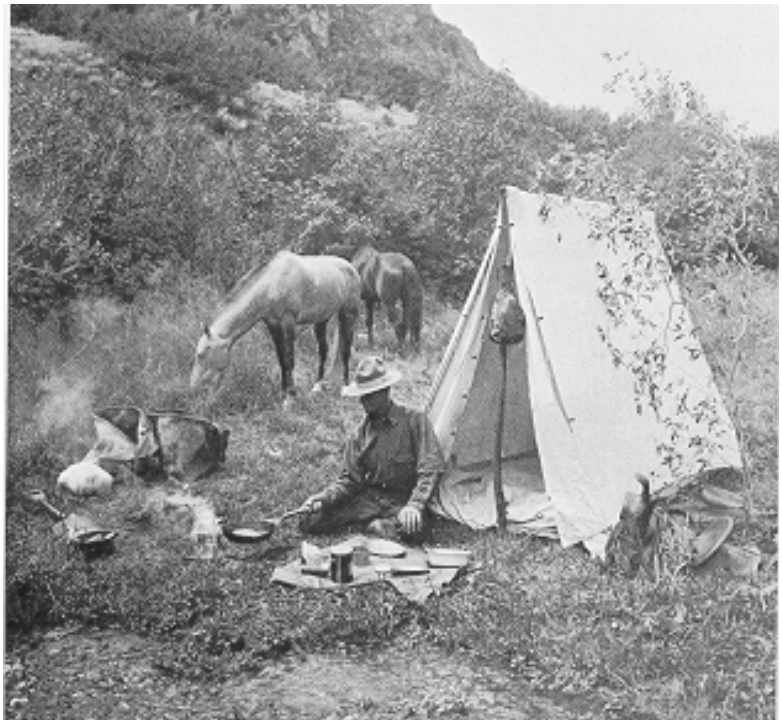
United States
Department of
Agriculture

Forest Service

Rocky Mountain
Region

BIGHORN NATIONAL FOREST

Final Environmental Impact Statement for the Revised Land and Resource Management Plan



November 2005

Note to Readers

The Forest Service believes reviewers should be given notice of several court rulings related to public participation in the environmental review process. First, reviewers of Draft Environmental Impact Statements must structure their response to the proposal to make clear the reviewer's position and contentions [*Vermont Yankee Nuclear Power Corp. v. NRDC,* 435 US 519, 53 (1978)]. In addition, environmental objections that could be raised at the Draft EIS stage but are not raised until after completion of the Final Environmental Impact Statement may be waived or dismissed by the courts [*City of Angoon v. Hodel,* 803F.2d 1016, 1022 (9th Circuit 1986) and *Wisconsin Heritages, Inc. v. Harris,* 490. Supp. 1334, 1338 (E.D. Wis. 1980)].

Explanation of Acreages and Data Sources

The information in the tables, figures and maps in the following document was generated from a variety of sources, including several different Geographical Information System (GIS) software platforms, tabular databases, and data from a variety of models used in planning analysis. The acreage figures from the various sources do not match exactly in all cases. However, when added, acres of National Forest System lands (regardless of the source) are within acceptable margins of error.

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Purpose and Need

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Chapter 1

Purpose and Need for the Action

The purpose of this action is to revise the 1985 Land and Resource Management Plan for the Bighorn National Forest. The revised plan will guide natural resource management activities on the Forest for the next 10-15 years while meeting the objectives of federal law, regulation, and policy. This revised plan establishes a systematic process for management, to achieve integrated desired condition for all forest resources at the National Forest scale, and to assure performance standards are established, monitored and, if necessary, changed during the life of the revised plan. The revision of the forest plan is based on a *need for change.* The *need for change* approach identifies and analyzes only those aspects of the 1985 Plan where adjustments are necessary. These changes are examined in more detail later in this chapter.

Need to Revise the Plan by Law

There is a need to revise the plan according to federal law, regulation, and policy. The Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act (NFMA) in 1976, requires that Management Plans be reviewed and, in most cases, revised every 10-15 years (36 CFR 219.10(g)). The current forest plan was approved on October 4, 1985. The Bighorn forest plan is being revised under the 1982 planning regulations (36 CFR 219). An Environmental Impact Statement (EIS) documenting the environmental analysis for this revision effort is required by NFMA (36 CFR 219.10(b)).

Need to Revise the Plan Based on Adaptive Management

The 1997 Committee of Scientists reviewing National Forest Planning pointed out the importance of recognizing "… the scientific uncertainty that arises from incomplete understanding of how ecological systems work …" Their recommendation was to acknowledge this uncertainty and to develop plans that embrace adaptive management principles. Adaptive management focuses on learning produced by testing management approaches against actual results. The Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act (NFMA) of 1976, provides for adaptive management through monitoring, amendments, and revision.

Forest plans are not static documents. Acknowledging that changes will occur and uncertainty exists, incorporating a robust monitoring strategy into the revised plan, and recognizing a 10-15 year life expectancy of this Revised Plan allows efficient completion of the revision process.

The 1985 Bighorn National Forest Plan was approved over a decade ago. Monitoring and evaluation have documented how things have changed since 1985:

- A number of the goals and objectives of the 1985 Forest Plan are out-of-date. In some cases, they are not always desirable (e.g., goal of maintaining riparian areas in a mid to late seral ecological condition) or in line with current thinking (e.g., goals directing us to "satisfy requirements for local community stability"). National Forest management is dynamic. Changes in public views, resource uses, demands, and natural resource knowledge require periodic re-evaluation.
- There is no distinction between standards and guidelines in the 1985 Plan. This affects how projects are implemented and the analysis required.
- Some standards and guidelines are not achievable or measurable (e.g., maintain habitat for each species on the forest at least at 40% or more of potential).
- Projected outputs in the 1985 Plan can't be met while operating under the current standards and guidelines (e.g., allowable sale quantity and grazing).
- Scientific knowledge of physical and biological processes has improved in recent years. For example, new and/or emerging techniques in the areas of biological diversity make revision of the 1985 Forest Plan necessary. There is a need for management activities to become more consistent with the ecology of the ecosystems present on the Forest.
- The 1985 Plan contains references, guides, and dates that are obsolete or no longer appropriate.
- Some management areas in the 1985 Plan are too small to administer for the intended purpose. Others are not being managed according to the Forest Plan direction (e.g., Piney and Rock Creeks).
- Inventory information concerning the Forest's land and water resources is more accurate than in 1985. The Forest now has a geographic information system (GIS), which greatly enhances forest management capabilities and will improve the plan revision process.
- Public involvement has identified new information, issues, and public values. In addition, increasing levels and new types of recreational use on the Forest (e.g., 4-wheel drive and all-terrain vehicles) call for new management approaches to address issues of public access, conflicts between uses, and protection of the environment.

- Newly created or changed laws and policies affect forest plan content and Forest management. Examples include the 1987 Clean Water Act, the Clean Air Amendments of 1990, and the new Roads Management Policy.
- Monitoring requirements for resources and programs do not address the objectives or reflect the current emphasis or needs for change.

After examining the 1985 Plan, the Forest Supervisor concluded many of the existing forestwide goals and objectives, standards and guidelines, and management area prescriptions should be changed, and therefore, recommended to the Regional Forester the forest plan be revised. A Notice of Intent to prepare an EIS to revise the 1985 Forest Plan was published in the *Federal Register* on November 10, 1999.

The Planning Area

The planning area encompasses the entire 1.1 million acre Bighorn National Forest, located in the Big Horn Mountain Range in north central Wyoming (see Map 1-1)The gross area within the proclaimed Forest boundary contains 1,115,161 acres, which includes 7,491 acres of state and private land. All of the watersheds originating on the Forest drain into the Yellowstone River through the Bighorn, Tongue, and Powder Rivers. The watersheds and water features within them are some of the biggest assets the Forest provides for biodiversity and user-associated values. The Forest has a diverse mixture of land, water, plants, and animals. Elevations range from approximately 4,000 feet to 13,175 feet above sea level on Cloud Peak. The Big Horns are often characterized as a forested island situated between the High Plains (Powder River Basin) to the East, and the arid Bighorn Basin to the West. The north boundary of the Forest borders Montana and the Crow Indian Reservation. The Cloud Peak Wilderness (189,039 acres) is at the core of the mountain range.

Approximately 60% of the National Forest System acres are forested. Principal species include lodgepole pine, Engelmann spruce and subalpine fir. Ponderosa pine, limber pine, and Douglas-fir are found at the lower elevations. Non-forested lands include grassy meadows, shrub lands, alpine tundra, and rocky areas. The Forest supports important populations of elk, mule deer, moose, and black bear. Many of the over 2,000 miles of streams and lakes support excellent fisheries.

The Big Horns are midway between Yellowstone National Park and Mount Rushmore National Memorial. Three highways, classified as Scenic Byways, cross the mountains. The Forest provides year-round recreation opportunities, and administers over 500 special use permits including communication sites, reservoirs, easements, power lines, outfitter guides, campground concession operations and lodges/resorts. We permit the grazing of approximately 28,000 cattle and 21,000 sheep. Through the end of 2004, after 19 years of implementation, the Forest has offered approximately 135 million board feet of timber and firewood. The mountains are an important water source for the surrounding agricultural lands and communities.

The Bighorn National Forest is subdivided into 3 administrative units, known as Ranger Districts, with offices located in Sheridan, Buffalo, and Lovell, Wyoming. The Forest Supervisor's Office is co-located with the Tongue District Office in Sheridan.

The Forest lies within 4 counties – Big Horn, Johnson, Sheridan, and Washakie (see the following table and Figure 1-1). Major towns include Lovell, Greybull, Buffalo, Sheridan, and Worland. Populations range from a high in Sheridan County of approximately 26,500 to about 7,000 in Johnson Country. Economies are generally rural. Employment is concentrated in several major sectors including service, retail trade, and government. Mining, agriculture, and manufacturing are other important sources of income.

Table 1-1. Acres of National Forest System lands by county within the Bighorn National Forest as of September 2000.

	County				
	Big Horn	**Johnson**	**Sheridan**	**Washakie**	**Total**
Acres	351,160	326,881	393,627	36,003	1,107,671

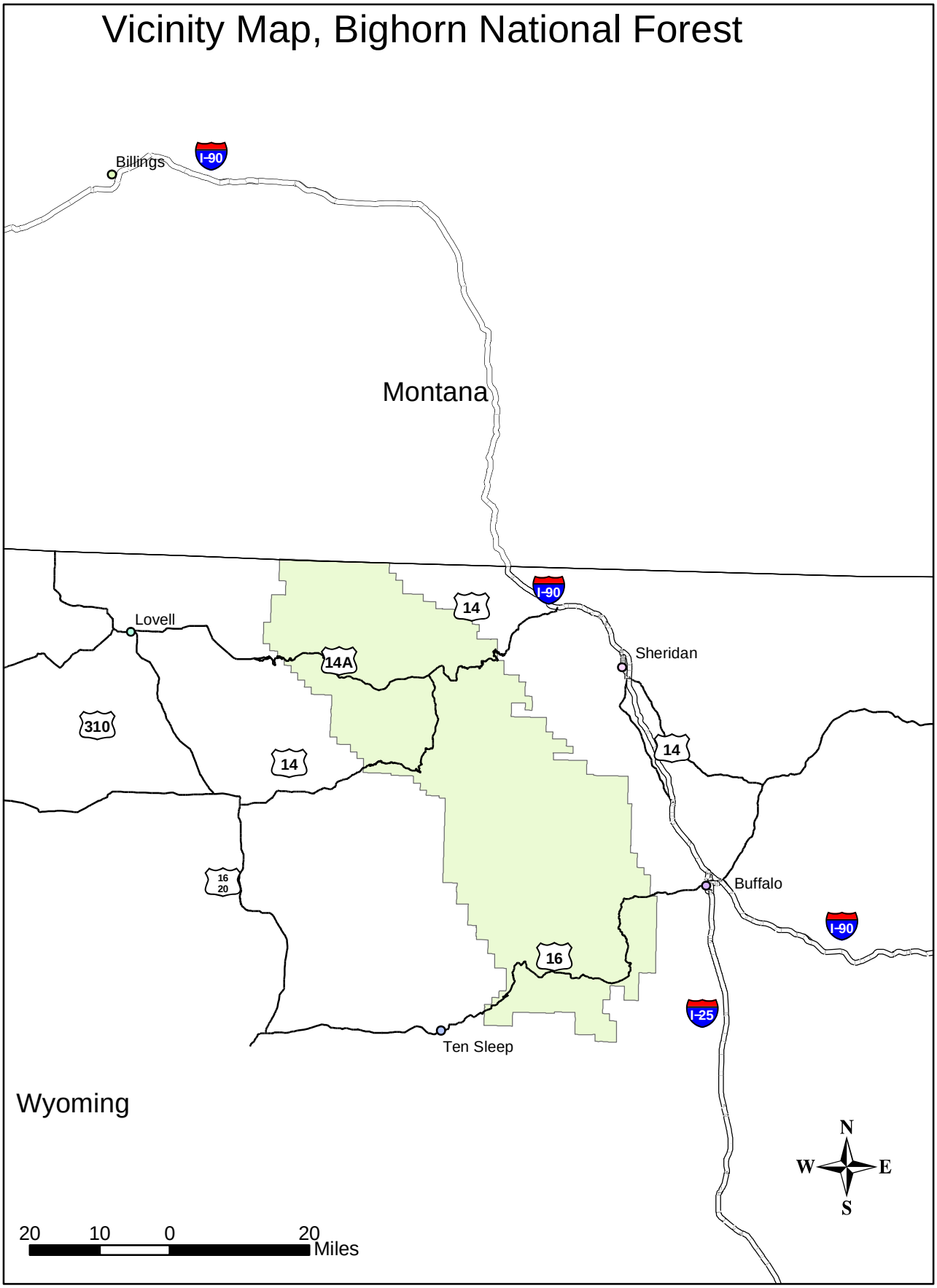
The Revision Topics

Revision topics are subjects where resource conditions, technical knowledge, or public perception of resource management have created a potential *"need for change."* Needed changes generally are important enough to affect large areas, change the mix of goods and services produced, and involve choices in management direction where there is no public consensus on the best course of action.

Revision topics were developed from a review of monitoring over a 13-year period from 1986 to 1998, results of an Allowable Sale Quantity (ASQ) analysis in the early 1990s, inventories/assessments, Forest Service conservation leadership initiatives, laws/regulations, and comments received during the scoping period. The 5 major plan revision topics identified include:

- Biological and Habitat Diversity
- Timber Suitability and Management of Forested Lands
- Roadless/Wilderness
- Special Areas (e.g., Wild & Scenic Rivers, and Research Natural Areas)
- Recreation and Travel Management

Figure 1–1. Vicinity map of the Bighorn National Forest



Biological and Habitat Diversity

Biological and habitat diversity are the variety of life in an area; they refer to the relative frequency and number of biological entities at a given scale. This includes the ecosystems, plant and animal communities, species, and the processes through which individual organisms interact with one another and their environments, including humans (USDA Forest Service 1992a). Biological diversity is described at many levels, ranging from the molecular scale to complete ecosystems but is most often described at the ecosection (Bailey 1984), landscape, or watershed scale in the context of forest planning.

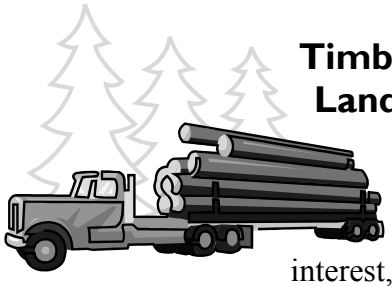
Because of its complexity, there is no widespread agreement on how to measure biological diversity or how best to perpetuate it. There is agreement that reducing the number of species in a system also reduces biological diversity (Langner and Flather 1994). Whether this is positive or negative depends on individual human values. Biological diversity is perhaps best maintained by ensuring sustainability of native landscape elements and composition, biological processes, and species viability. The requirement for species viability is described in the NFMA and the 1982 planning regulations (36 CFR 219.19). Because species viability incorporates the landscape and biological process elements, it is the key factor the Forest Service selects in providing for biodiversity. The National Forests offer a unique opportunity to maintain biodiversity due to the ability to control some aspects of human uses or demands on the environment.

For this revision, the Bighorn National Forest adopted the Region 2 process to evaluate and manage for species viability (Hayward et al. 2000), which includes the elements of landscape composition and biological processes in conjunction with sustainable management (refer to the Viability Assessment in the administrative record). Limiting factors or needed management changes were identified and included in all aspects of the Revised Plan, including provisions for ecosystem processes and individual species conservation measures.

Need for Revision

- To have management activities more consistent with the ecology of the ecosystems that comprise the Bighorn National Forest.
- To provide species management and protection direction that is up-to-date and compliant with recent court rulings on species viability implementation, especially for Management Indicator Species (MIS) and rare plants and animals.
- To provide wildfire, fuels management and fire ecology goals, standards and guidelines that reflect the best science and increased public awareness.

- To update Revised Plan direction so it reflects the latest scientific information, with attention given to managing on a landscape scale, including the use of larger management areas.
- To improve the direction in the Revised Plan for aquatic and fisheries resources, including water quality.



Timber Suitability and Management of Forested Lands

The amount of land that is suitable and made available for timber harvest is re-assessed in this plan revision because of regulatory requirements, the high level of public interest, and concerns over the ability of the Forest to meet timber outputs while maintaining the 1985 standards and guidelines. Outputs have typically been expressed as Allowable Sale Quantity (ASQ), which is defined as the maximum amount of sustainable timber harvest allowed in a decade. The Revised Plan also includes a Total Sale Program Quantity (TSPQ) estimate which will include timber volume from lands suited for timber production and lands *un*suited for timber production. For some alternatives, it may also be constrained by projected Forest budgets and staffing capabilities.

The 1985 Forest Plan allocated approximately 92% of the tentatively suited lands (those lands where technology is available that ensures timber production without irreversible resource damage and where there is reasonable assurance the lands can be adequately restocked) to management areas for timber management. Timber management is practiced across these management areas with differing management emphases and intentions. The 1985 Plan originally set the ASQ at 3.86 MMCF (149 million board feet) per decade. Actual volume offered has fallen well short of the projected levels. Less than 20% of the suited lands in the 1985 Forest Plan was outside inventoried roadless areas.

Need for Revision

- To determine timber suitability and expected wood products outputs (ASQ and TSPQ).
- To determine which forested lands on the Bighorn National Forest should be treated for hazardous fuels conditions, or to reduce the hazard from insects and disease.
- To develop standards and guidelines that provide up-to-date direction on how forest vegetation management will be conducted.
- To make the forest plan compatible with recent legislation, such as the Healthy Forest Restoration Act.

Roadless/Wilderness

The President signed the Wyoming Wilderness Act in 1984 (Public Law 98-550) designating the 189,039-acre Cloud Peak Wilderness on the Bighorn National Forest. The act also released all remaining areas (those not designated as wilderness by the act) to multiple-use management until the next forest plan revision. The 1985 Plan allocates most of these remaining roadless lands to management areas that allow road building. Approximately 56% of the Forest, excluding the Cloud Peak Wilderness, was classified as "roadless" in 1979 as part of a nationwide inventory process known as RARE II (Roadless Area Review and Evaluation II).

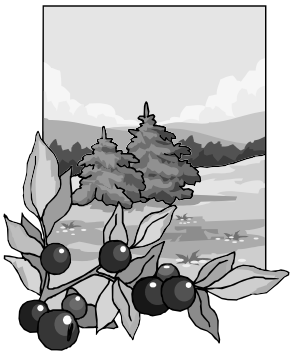
After years of local and national debate on roadless area management, the Forest Service initiated another nationwide roadless process in the late 1990s. On January 12, 2001, final regulations were published in the *Federal Register* establishing requirements for protecting inventoried roadless areas on National Forest System land. These regulations prohibited new road construction/reconstruction and timber harvest except for special circumstances. Litigation concerning the regulations began shortly after publication. The most recent judicial decision (July 13, 2003) was a permanent injunction against implementation of the 2001 roadless regulations nationwide. On May 13, 2005, another set of final regulations were published in the *Federal Register* establishing procedures for protecting inventoried roadless areas on National Forest System land. The 2005 roadless regulations allow governors to petition to establish roadless regulations for their state. If the governor does not petition to establish roadless regulations for their state by the time stated in the 2005 roadless regulation, roadless area designation and management fall under the forest plan decision.

An inventory and evaluation of roadless areas for consideration as potential wilderness is a requirement of the forest planning process (36 CFR 219.17) and the Wyoming Wilderness Act.

Need for Revision

- To inventory roadless areas and determine which should be managed to retain roadless characteristics into the future or which should be managed for roaded uses.
- To determine if the Bighorn National Forest should have additional wilderness areas.

Special Areas



The Bighorn National Forest includes several unique areas or resources of physical, biological, or social interest. Collectively these are referred to as "special areas." They may include Wild and Scenic Rivers, Research Natural Areas (RNAs) (an area set aside to preserve a representative sample of an ecological community) and other special areas with scenic, historical, cultural, geological, archaeological, or other outstanding characteristics.

The Wild and Scenic Rivers Act, as amended (December 31, 1992) and Forest Handbook 1909.12, Chapter 8 directs the Forest Service to evaluate rivers for inclusion in the National Wild and Scenic River System during forest planning. 36 CFR 219.25 direct the Forest Service to make recommendations for Research Natural Areas during forest planning.

In the 1985 Forest Plan, the Little Bighorn and Tongue Rivers were determined to be eligible as potential additions to the National Wild and Scenic Rivers System. For a river to be included as an addition to the National Wild and Scenic Rivers System, it must be free flowing and possess river values judged to be outstandingly remarkable. In 1989 the Little Bighorn was recommended to Congress for official designation. As of this date, Congress has not acted.

The 1985 Plan included two RNAs: Bull Elk Park (718 acres) and Shell Canyon (730 acres). In cooperation with the University of Wyoming, 11 other potential RNAs were inventoried to be considered during this revision. Because they are managed as relatively pristine ecosystems, RNAs can serve as 'ecological baselines' to help understand if management is sustainable.

The Bighorn National Forest also contains a variety of archeological sites. The mountains provided a highly favorable environment for the sustenance and development of earlier cultures. Likewise, the history of the Forest and surrounding basins presented a vivid portrayal of the life on the developing frontier. These archeological sites range from the nationally recognized Medicine Wheel National Historic Landmark to numerous lesser-known historic and prehistoric sites and properties.

Need for Revision

- To make the forest plan compliant with new laws and direction concerning heritage resources.
- To determine if additional Wild/Scenic Rivers are needed and desired.
- To determine if additional RNAs are needed and desired.

Recreation and Travel Management

The Bighorn National Forest is important as both a primary destination and an "overnight" stop for travelers heading to and from Yellowstone National Park and the Black Hills of South Dakota. Principal recreation activities include driving for pleasure, camping, hunting, fishing, hiking, horseback riding, snowmobiling and all-terrain vehicle (ATV) use. Many campgrounds are near capacity during the summer and finding remote locations for dispersed recreation (recreation occurring outside developed facilities) is becoming more difficult. Winter use (snowmobiling, cross-country skiing) is very popular. Projections of recreation demand show continued growth over the next several decades. Unmanaged recreation, primarily in the form of summer off-road travel, is one of the primary 'threats' to public land. Since 1985, changes in technology have introduced new recreational activities (e.g., mountain bikes, ATVs) and increased the capabilities of existing activities (snowmobiles).

Need for Revision

- To provide for high quality nonmotorized and motorized recreation activities.
- To update or add forest plan direction that will provide for recreation use while protecting the resource.
- To include allocations, standards, or guidelines to provide high quality recreation experiences along the Scenic Byways.

Issues and Topics Raised But Not Addressed

The public and other agencies identified a number of issues that were not addressed in the alternatives. These issues are summarized in Appendix A of the FEIS and in more detail in several documents in the administrative record. There are several reasons why some issues were not addressed in the alternatives, including:

- The issues are outside the authority and jurisdiction of the Forest Service, such as grazing fees, global warming, or hunting regulations.
- The issues were addressed in standards or guidelines, management area prescriptions, or forest-wide goals and objectives.
- The issues are related to project implementation.

Some issues were not considered because the 1985 plan adequately addressed them, and there is no need for change. Direction that applies to these issues will be carried over into the Revised Plan. Finally, some issues need to be addressed by changes in law, regulation, national or regional policy, or by other agencies.

Decisions Made in Forest Plans

The key decisions made in a forest plan for long-term management of National Forests are:

1. Establishment of Forestwide multiple use goals and objectives, 36 CFR 219.11(b).
2. Establishment of Forestwide management requirements (Forestwide standards and guidelines), 36 CFR 219.13 to 219.27).
3. Establishment of management area direction (management area direction and associated standards and guidelines), 36 CFR 219.11(c).
4. Designation of suitable timberland and establishment of allowable sale quantity (ASQ). Designation of lands suitable for grazing and browsing by livestock. Identification of lands suitable and available for oil and gas leasing. 36 CFR 219.14, 219.16, 219.20, and 228,102(d).
5. Establishment of requirements for monitoring and evaluating the implementation of the Revised Plan to meet the requirements of 36 CFR 219.11(d).
6. Recommendations on additions to the wilderness preservation system.

Plan Versus Project Decision-Making

Forest plans set out management area direction with standards and guidelines for future decision-making. Plans are adjustable through monitoring and evaluation, amendment and revision. Management areas are the zoning ordinances under which future decisions are made. Forest plans establish multiple-use goals and objectives for the planning area. Plan level actions are: (1) approval (16USC 1604(d) (j), (2) amendment (16USC 1604(f)(4)), and (3) revision (16UC 1604(f)(5)). Project decisions are not authorized, carried out, or funded by forest plan approval, amendments or revisions except as specifically authorized in the Record of Decision.

Document Availability

Copies of all forest plan revision documents are available at 2013 East Side Second Street, Sheridan, WY, 82801. Documents are also available on the Internet at http://www.fs.fed.us/r2/bighorn/.